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FLOOD OF PROTEST

A Dutch plan to prevent a sharp turn in the river from turning into a flooding nightmare would wipe out dozens of riverside homes.

By John McQuaid, Staff writer

LENT, NETHERLANDS -- Maarten Broekman's early 19th century house stands on a batture at a sharp bend in the Waal River. An earthen dike towers 20 feet behind the house. In front, a sun-dappled, grassy expanse stretches 300 yards to the river's edge, giving Broekman and his family a sweeping view of the city of Nijmegen on the other side.

When the river, a tributary of the Rhine, rises in the winter, that expanse can flood. Sometimes, water laps onto Broekman's patio and he pumps it dry. During the last major flood -- in 1995 before he moved in -- 3 feet of water came into the house.

Now the Dutch government wants his house out of the way. Concerned with rising water levels in the river, officials want to buy up homes in the area and dig an emergency channel straight through Broekman's property. Part of a coordinated plan to prevent flooding along the length of the Waal River, the channel would act as a holding basin for storm waters, in somewhat the same way that the Bonnet Carre Spillway into Lake Pontchartrain provides a safety valve when the Mississippi River is at flood level.

But Broekman isn't selling, at least not yet. He helped organize a neighborhood group to oppose the plan. They devised an alternative: Dig a narrower basin. That would preserve the homes and still provide flood protection -- though it would last for about 50 years, just half the century-long lifespan projected for the government's solution.

Though most of the Netherlands is protected from river and ocean floods by a carefully maintained system of dikes, dunes and storm-surge barriers, officials say it's still not safe enough because of melting snow, rising seas and sinking land. Dutch law requires that certain safety levels be maintained. Even now, officials warn, some areas have dropped out of compliance.

"Our system has changed," said Marion Smit, the top water-policy official at the Ministry of Transport, Public Works and Water Management. "We have global climate change, the possibility of higher storm waves on the coast. So we are taking another look. Not every area of the Netherlands is as safe as defined by the law."

Shoring up defenses

The Dutch have embarked on an effort to gauge their flood defenses and figure out which should be strengthened to account for the changes.

Part scientific guesswork, part engineering, part politics, it is a difficult process but one that officials say is necessary to avert a disaster 50 or 100 years -- or less -- down the line.

It's the approach American officials will have to adopt if they want to keep New Orleans safe behind a restored storm defense network. Building a Category 5 hurricane levee system for 2005 conditions won't do much good if by 2055 the Gulf of Mexico has risen by a foot and hurricanes have gotten stronger and more frequent, as some predictions suggest.

The Dutch water ministry is spending $3.5 billion to upgrade river defenses, a project called the Delta Plan for the Major Rivers. The effort came in response to major floods in 1993 and 1995. The February 1995 flood overflowed all three of the Netherlands' major rivers. No one died, but 250,000 people were evacuated, and property damage was heavy.

Rather than simply raise dikes all along the rivers, the government has turned to a couple of more controversial methods. During a future inundation, some rural flood plains will be deliberately flooded to prevent disaster downstream. In other places, rivers are being widened and compartments or channels dredged to temporarily divert water. The ministry has also launched a public awareness campaign called "Living with Water" to sell a sometimes skeptical public on these concepts.

"We know the possibility of failure in low-lying areas is rising. The bottom is going down. The possibility of evacuation is remote," Smit said. "Which is why it's very important to have more space for water: to look at natural processes, to work not against nature but with nature."

Bogged down in bend

Lent and Nijmegen flooded in 1995, and the narrow, 90-degree bend in the river is especially problematic because it is a bottleneck that can slow down the flow, forcing the river level higher upstream. If more space could be created at the bend, then that problem would go away -- at least for a while.

Early scenarios included a diversion across the back side of town, something that would have turned Lent into an island during a major river flood. But the idea was scaled back after residents complained. The current proposal would still claim 55 houses on both sides of the river dike -- a pleasant neighborhood of homes and winding streets between two bridges. At least five of the homes have historic status.

The Dutch system depends heavily on the involvement of community organizations, a process called the polder system, named for the reclaimed land surrounded by dikes where most of the people live.

"We consult them every time. It's impossible to make a plan without consulting those organizations. We try to get a commitment early on," said Arnold van der Wees, an environmental engineer at the ministry.

"That's the Dutch polder system: Whether you are rich or poor, we all live in the same polder -- below sea level."

Broekman and some neighbors formed a group called, roughly, "People Suffering from the Lent Dike Relocation." It aims, if possible, to forge a compromise. Members have

met twice with the Cabinet minister overseeing flood defenses and with Smit as well. While the government's buyout offer is for current market value, they say they don't want to move.

"The houses, that's not the problem. These locations are very rare in Holland anymore," said Jos Verstappen, a neighbor who belongs to the group, gesturing at the green expanse in Broekman's front yard. "Holland is densely populated. This space is unique." They partnered with a retired engineer to devise their alternative, which would preserve the neighborhood at the price of longer-term protection -- but, they say, for about 60 percent of the cost of the government plan.

Planning ahead

The debate has an air of abstraction because it is based on scientific estimates of future water flows, which could prove to be wrong. The government's target is to guard against high water flow levels that it projects could be routine in 100 years -- about 18,000 cubic meters per second. The local group is willing to settle for protection against flows above 17,000 cubic meters per second. The river flow per second has not yet topped 12,500 cubic meters.

"Our plan is good for 50 years. The government is looking at a plan for 100 years. If in the future it's necessary to do this, then you can go ahead and do things here then," Verstappen said.

Such debates might prove problematic in the U.S. political system, where some segments of the public and some elected officials are skeptical about the reality of global warming. But it is especially important for Louisiana, which already is suffering more than other areas from rising seas and more frequent or intense storms -- whatever their cause. In that respect, engineering the Louisiana coast will be more difficult than the Dutch coast because hurricanes are a more frequent and powerful threat than North Sea storm surges.

The ministry is supposed to decide this month between the 50- and 100-year plans. Residents don't know which way it will go, but they are prepared. "If they choose their plan, we will protest," Verstappen said. "There will be a juridical process. It will take years."